



PETROLEUM WATCH

California Energy Commission

May 2016

Recent Petroleum News and Outside Analyses

Prices

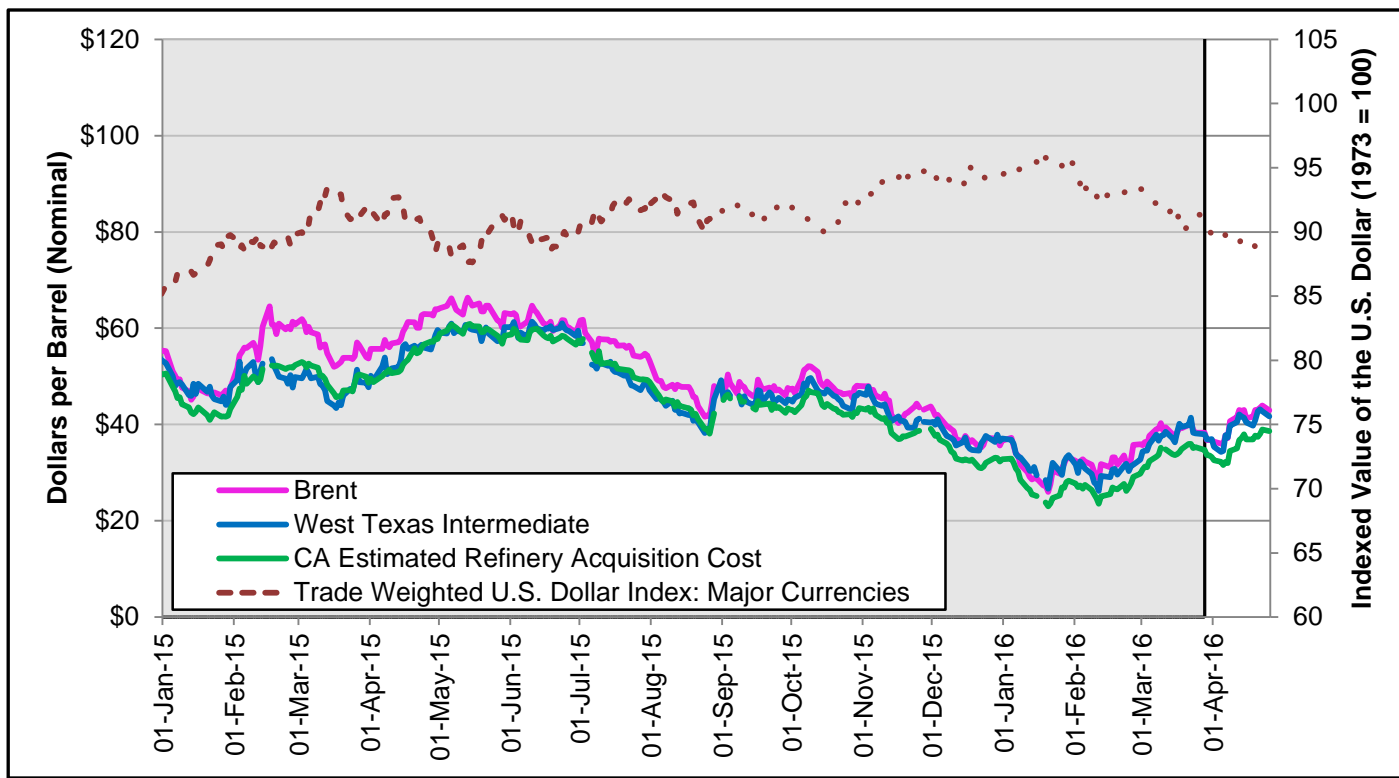
- **Crude Oil Prices:** Prices continue their recent increase: Brent and West Texas Intermediate (WTI) crude prices closed at \$42.97 and \$41.67 on April 25, respectively, up 12 percent and 10 percent since the end of March. Nevertheless, prices remain about 30 percent below year-ago levels.
- **California Gasoline Prices:** On April 22, California gasoline prices closed at \$2.78, unchanged from the end of March.
- **California Diesel Prices:** On April 22, California diesel prices closed at \$2.51, an increase of \$0.08 from the end of March. This continues the reversal of a nine-month price decline that ended in March.

Refining News

- **Phillips Rodeo 66 Refinery (Hydrogen Plant):** On April 25, the third-party hydrogen plant at the Rodeo refinery shut down after experiencing a release of sulfur dioxide emissions above the reporting limits. The facility supplies supplemental hydrogen to the refinery.
- **ExxonMobil Torrance Refinery:** On April 19, problems with the alkylation unit at its 155,800 bpd Torrance Refinery pushed the April 25 start date to May 5. The delay has not affected the June 1, 2016 acquisition of the refinery by PBF Energy.
- **Tesoro Carson Refinery:** The refinery is undergoing planned maintenance. It is also undergoing the process of combining with the Tesoro Wilmington Refinery to become the largest West Coast Refinery, with a completion date in mid-2017.
- **Chevron El Segundo Refinery:** On April 14, the refinery experienced an unexpected shutdown of a unit due to some flaring set off by a mechanical failure. The incident is expected to reduce production rates for 24 hours after the event. Before the event the refinery had recently finished some planned maintenance.

Crude Oil Prices

Figure 1: Daily West Coast Spot Crude Oil Prices, June 2014 to Present



Source: U.S. Energy Information Administration (U.S. EIA), Oil Price Information Service (OPIS), and Federal Reserve Bank of St. Louis. Note: Shaded areas on all graphs indicate previous report data. Unshaded areas indicate new data since last month's *Petroleum Watch*.

Crude oil prices have increased since late March (**Figure 1**). West Texas Intermediate (WTI) moved from \$37.99 on March 28 to \$41.67 on April 27, an increase of 10 percent. Brent prices moved up from \$38.33 to \$42.97 over the same period, an increase of 12 percent.

Prices for all grades of crude remain well below year-ago levels, as seen in the table at right. The decline in the value of the dollar so far this year has contributed little to the rise in the price of oil; for the year-to-date, WTI has increased 13.2 percent in dollars and 11.7 percent in Euros.

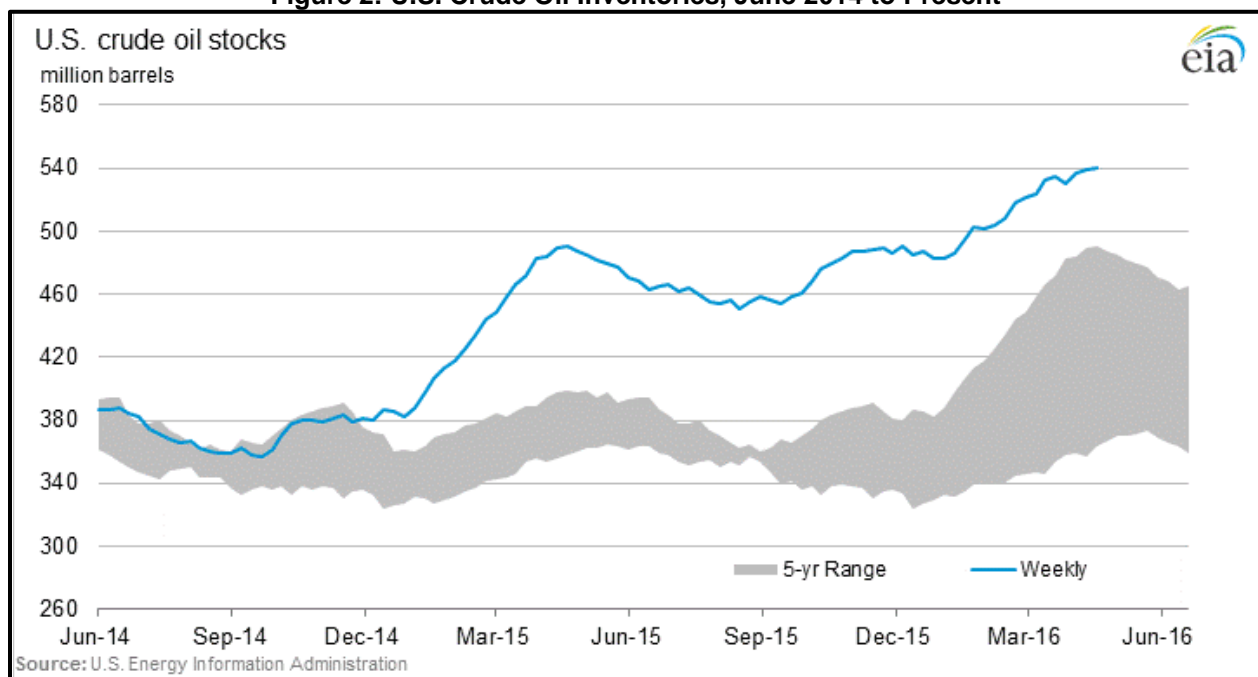
| <u>Crude Oil Prices</u> | |
|----------------------------|------------------|
| <u>April 2016 vs 2015</u> | |
| (Percent Change) | |
| Brent | 31% lower |
| WTI | 27% lower |
| CA-RAC | 33% lower |
| <u>April 2016 Averages</u> | |
| Brent | \$40.82 |
| WTI | \$39.77 |
| CA-RAC | \$35.68 |
| <u>April 25, 2016</u> | |
| Brent | \$42.97 |
| WTI | \$41.67 |
| CA-RAC | \$38.61 |

Crude Oil Production and Storage

Even though crude oil prices remain near \$40 per barrel, U.S. crude oil inventories continue to increase (**Figure 2**). A slight decline in domestic crude oil production has been more than offset by an increase in imports. Output from the Organization of the Petroleum Exporting Countries (OPEC) producers remains at a high level.

- U.S. crude oil production for April is estimated by EIA at 8.9 million barrels per day (bpd), down from 9.0 million barrels in March. This is a 4.6 percent decline from year-ago production levels. For the year-to-date, it is a 2.2 percent decline when compared to the corresponding period in 2015.
- Nevertheless, crude oil inventories in the United States increased during April to 541 million barrels on April 22, which is a new high for the year. Inventory levels remain high due to the high level of imports: 7.6 million barrels for the week of April 22. For the year-to-date, imports are 6.6 percent higher than for the corresponding period a year ago.
- Although inventories have been on an upward trend all year, the increase is only half the size seen last year. For the year-to-date, domestic crude inventories increased an average of 3.1 million barrels per week; the corresponding average for 2015 is 6.2 million barrels per week. In 2015, inventories peaked on April 24 at 491 million barrels; the following eight weeks saw a dramatic reversal, with declines averaging 3.5 million barrels per week. Inventories for the upcoming weeks will be closely watched to see if this pattern repeats.

Figure 2: U.S. Crude Oil Inventories, June 2014 to Present

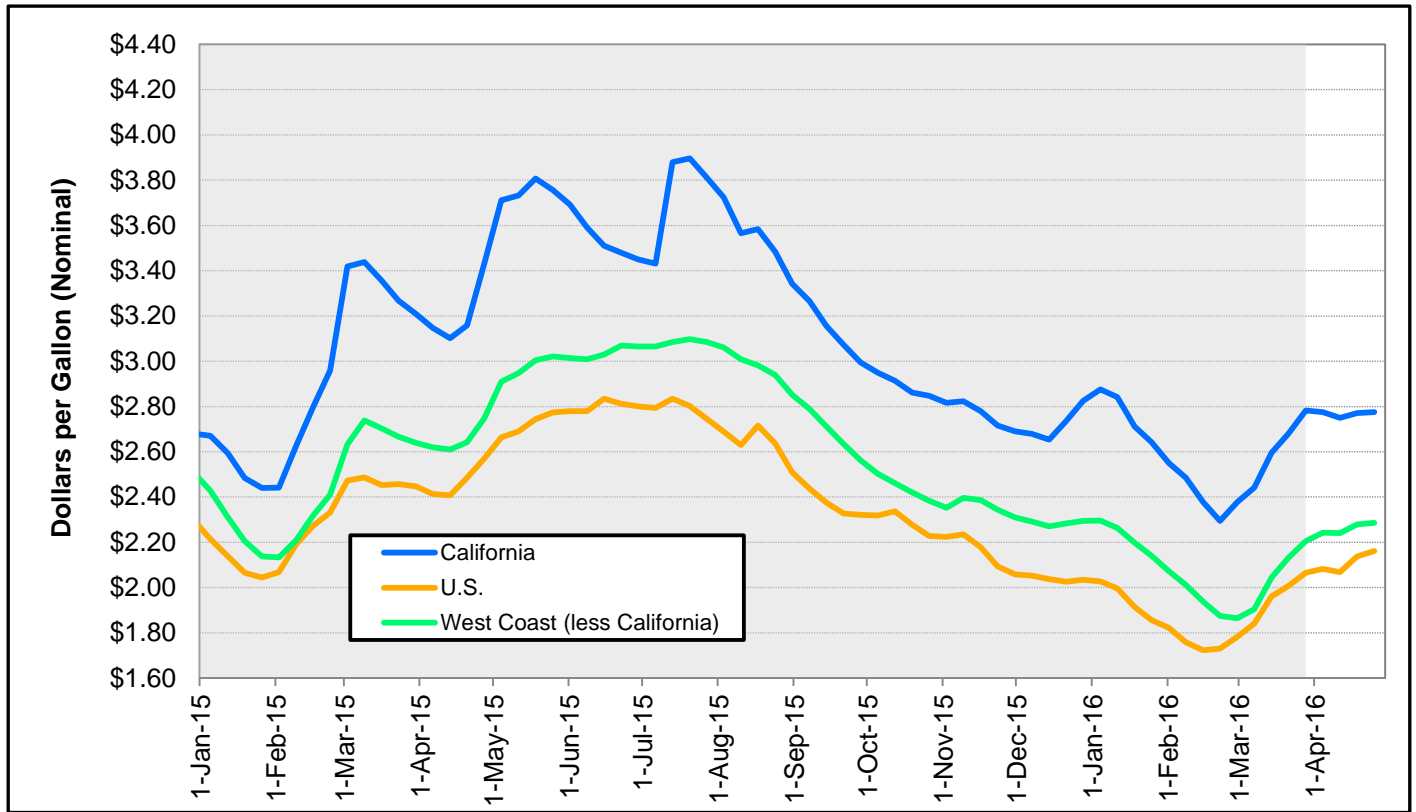


Source: U.S. EIA.

- According to the March data from OPEC, Saudi Arabian crude output remained at 10.1 million bpd. Total OPEC production, however, declined 200,000 bpd from January's level to 32.25 million bpd. According to some reports, OPEC production rose to 32.6 or 33.2 million bpd in April and there are concerns that Saudi Arabia may increase production this summer.

Gasoline and Diesel Retail Prices

Figure 3: Regular Grade Gasoline Retail Prices, California vs. West Coast vs. United States



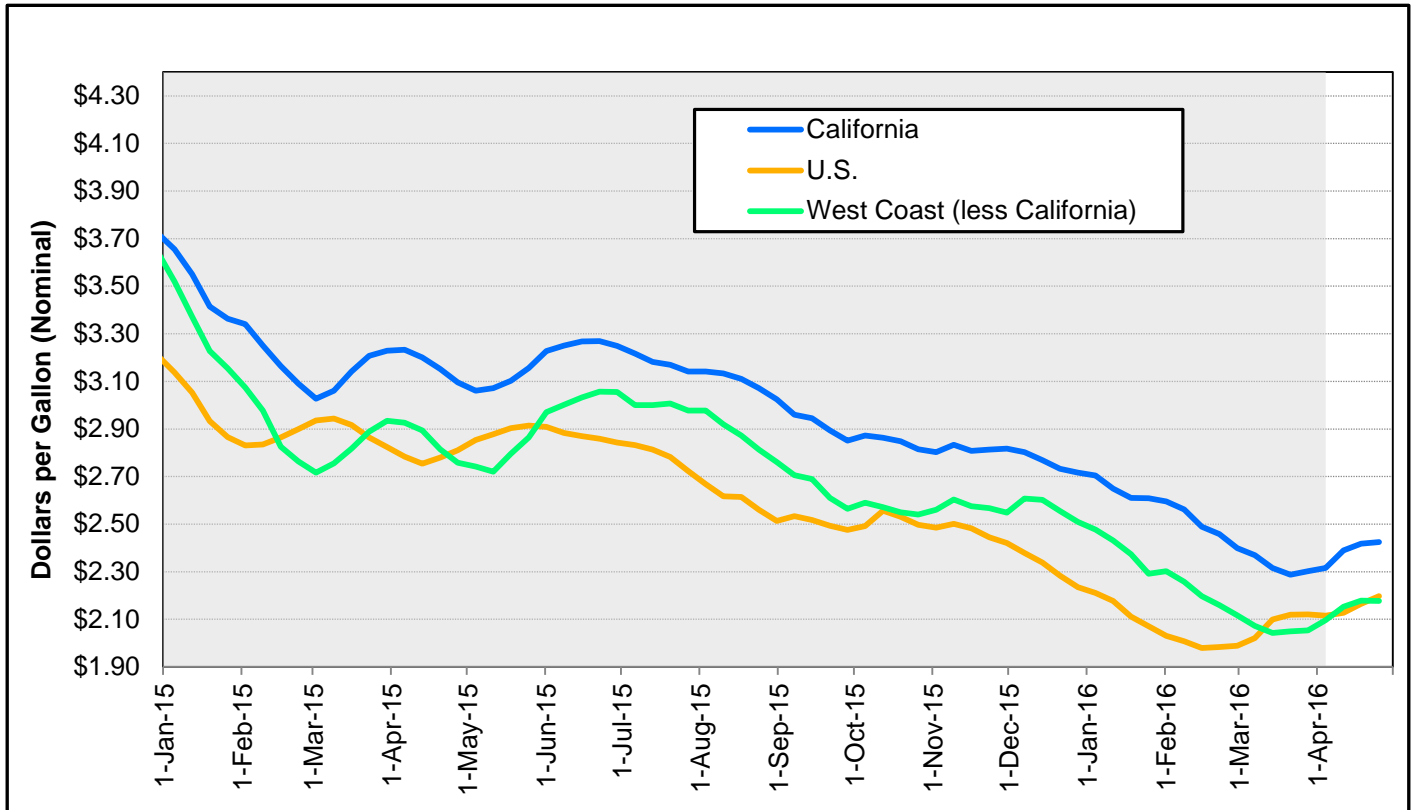
Source: U.S. EIA

After reaching a new five-year low in mid-February, California gasoline prices climbed throughout March and plateaued at \$2.78 by the beginning of April (Figure 3). Prices did not deviate much from that initial value and finished at \$2.78 during the week of April 25. The average price of California gasoline for the month of April was still lower at \$2.77 compared to \$3.21 a year ago.

Unlike California gasoline prices, West Coast and U.S gasoline prices did increase during April: starting from \$2.24 and \$2.08, respectively, on April 4 and finishing at \$2.29 and \$2.16 on April 25. During the same time frame, the price difference between California and the U.S decreased \$0.05, reaching a difference of \$0.49.

| Gasoline Prices | |
|-------------------------------|-----------|
| April 2016 vs 2015 | |
| (Percent Change) | |
| California | 14% lower |
| U.S. | 14% lower |
| West Coast | 15% lower |
| April 2016 Averages | |
| California | \$2.77 |
| U.S. | \$2.11 |
| West Coast | \$2.26 |
| Week of April 25, 2016 | |
| California | \$2.78 |
| U.S. | \$2.16 |
| West Coast | \$2.29 |

Figure 4: No. 2 Diesel Ultra-Low-Sulfur Retail Prices, California vs. PADD5 vs. United States



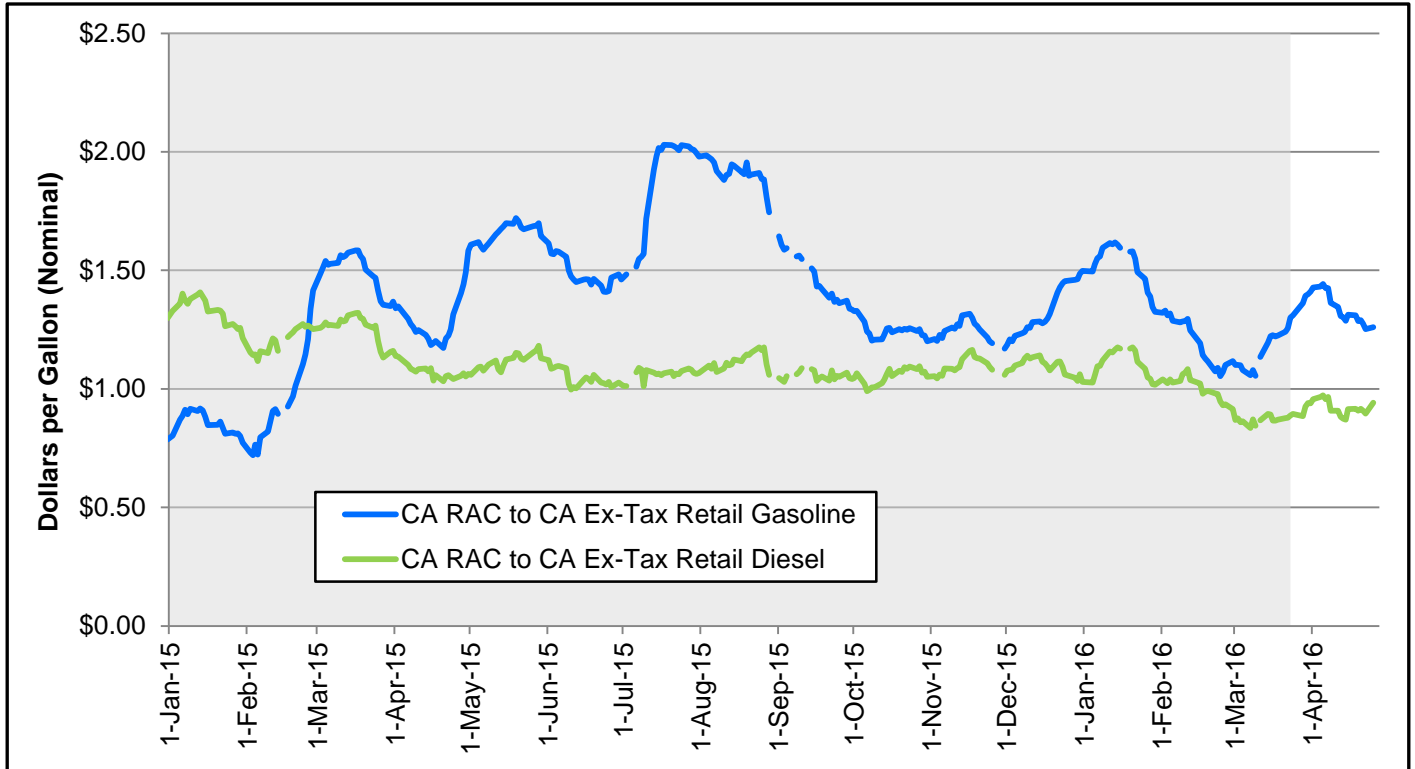
Source: U.S. EIA.

California diesel prices increased by almost \$0.08 during April, reaching \$2.51 during the week of April 25. Nevertheless, April prices remain 21 percent lower than a year ago (Figure 4). Similarly, the prices increased along with April's crude oil prices (Figure 1).

During April, California diesel prices remained 21 percent lower than 2015 prices. Likewise, U.S. and West Coast diesel prices are 23 and 20 percent lower than last year, respectively. California diesel prices ended the month 14 percent above U.S. diesel prices. West Coast diesel prices seem to be following a pattern seen over the past three years, moving above and below U.S. diesel prices, perhaps due to maintenance or other market situations in Washington and Oregon.

| <u>Diesel Prices</u> | |
|-------------------------------|-----------|
| <u>April 2016 vs 2015</u> | |
| <u>(Percent Change)</u> | |
| California | 21% lower |
| U.S. | 23% lower |
| West Coast | 20% lower |
| <u>April 2016 Averages</u> | |
| California | \$2.46 |
| U.S. | \$2.15 |
| West Coast | \$2.23 |
| <u>Week of April 25, 2016</u> | |
| California | \$2.51 |
| U.S. | \$2.20 |
| West Coast | \$2.28 |

Figure 5: CA-RAC to Ex-Tax California Gasoline and Diesel Margins



Source: U.S. EIA and OPIS

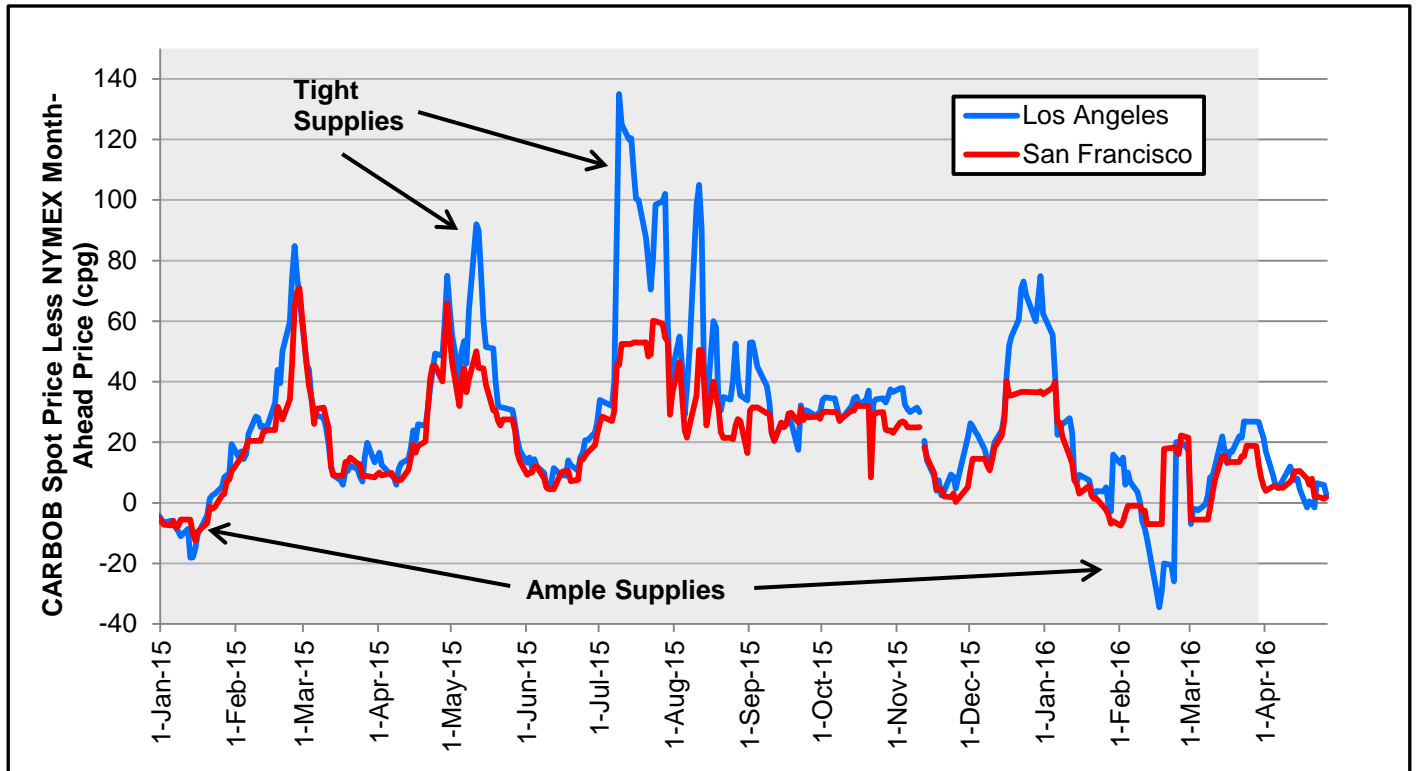
The California Refinery Acquisition Cost (CA-RAC)-to-ex-tax retail gasoline margin held at \$1.26 on April 25, \$0.08 lower than the \$1.33 seen on March 28. The CA-RAC to retail diesel margin increased \$0.06 to \$0.94 (Figure 5).

California’s gasoline margin remains above \$1.00 15 months after the explosion at ExxonMobil’s Torrance refinery on February 18, 2015. The gasoline margin averaged \$1.34 in April 2016, \$0.05 higher than the April 2015 average of \$1.29. The gasoline margin in April 2014 averaged \$0.97. These margins suggest that the CA-RAC-to-retail gasoline margin is \$0.37 higher than normal.

The California diesel margin has been less volatile than gasoline for the past 12 months. Diesel margins have stayed below \$1.20 since March 2015. This indicates that supply issues have been limited to gasoline since the ExxonMobil Torrance incident.

| <u>Crude to Retail Margins</u> | |
|--------------------------------|------------------|
| April 2016 vs 2015 | |
| (Percent Change) | |
| Gasoline | 4% higher |
| Diesel | 14% lower |
| April 2016 Averages | |
| Gasoline | \$1.34 |
| Diesel | \$0.92 |
| April 25, 2016 | |
| Gasoline | \$1.33 |
| Diesel | \$0.86 |

Figure 6: California Spot Gasoline to NYMEX Futures Price Spread



Source: U.S. EIA and OPIS

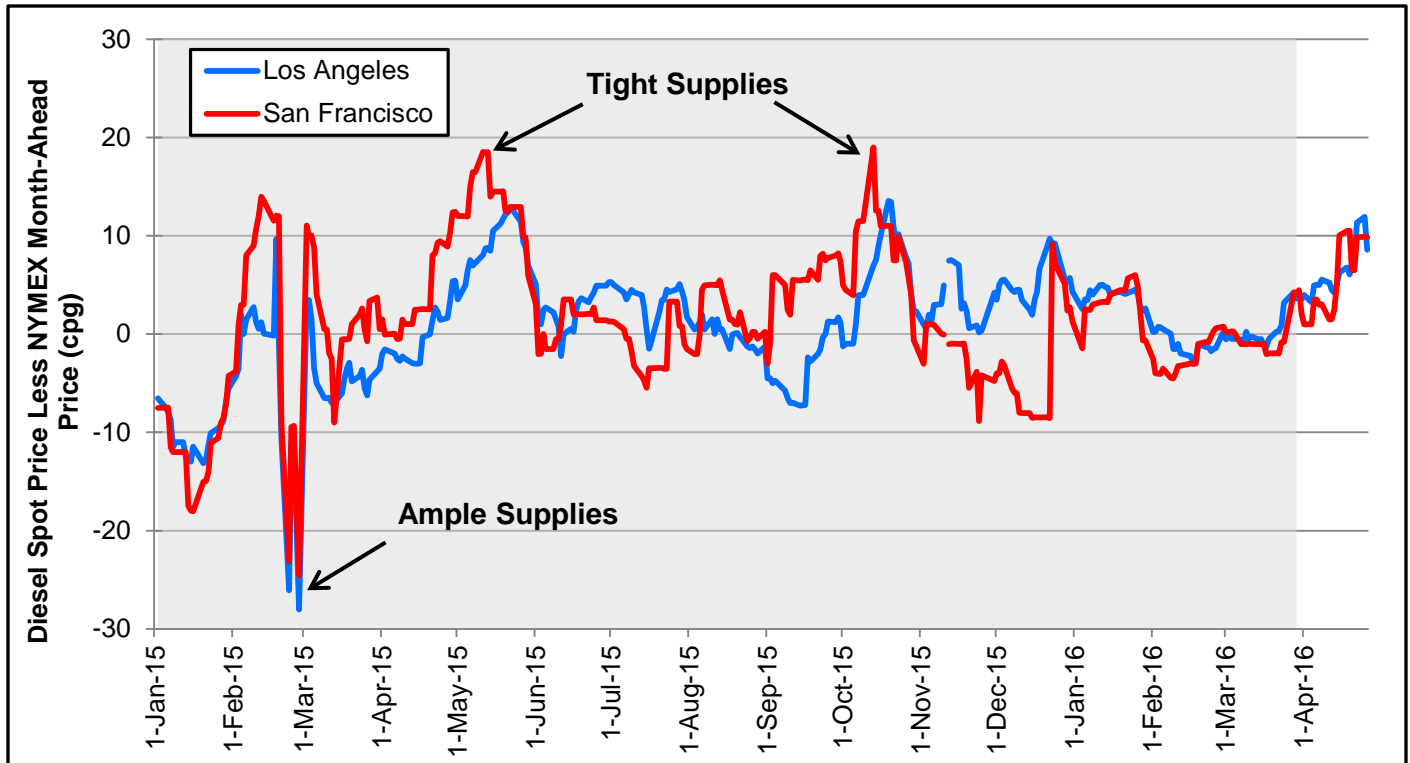
The spread between the Los Angeles (LA) spot gasoline price and the New York Mercantile (NYMEX) futures price decreased to \$0.03 in April (Figure 6). The LA-less-NYMEX spread declined \$0.07 to \$0.09 on April 4 and never rose higher than \$0.12 through April. The monthly average for the LA-less-NYMEX spread decreased \$0.08 from \$0.14 in March to \$0.06 in April.

The San Francisco (SF) spot price averaged \$0.06 above the NYMEX price in April. The SF-less-NYMEX spread reached a monthly high of \$0.11 on April 15 and fell to low of \$0.01 on April 25. Both SF and LA-less-NYMEX saw low volatility and a narrow spread. This indicates that the California gasoline market is in balance relative to the U. S. market.

Since January 2016, SF and LA-less-NYMEX spreads stayed under the \$0.30 level and have been less volatile than in 2015

| <u>Gasoline Spot-Futures Spread</u> | |
|-------------------------------------|-----------|
| <u>April 2016 vs 2015</u> | |
| (cents) | |
| Los Angeles | 23¢ lower |
| San Francisco | 19¢ lower |
| <u>April 2016 Averages</u> | |
| Los Angeles | 6¢ |
| San Francisco | 6¢ |
| <u>April 26, 2016</u> | |
| Los Angeles | 3¢ |
| San Francisco | 2¢ |

Figure 7: California Spot Diesel to NYMEX Futures Price Spread



Source: U.S. EIA and OPIS

After remaining close to NYMEX prices in March, both LA and SF spot prices for California Air Resources Board (CARB) diesel showed an upward trend throughout April. Starting from a positive spread of around \$0.03 at the end of March, the LA-less-NYMEX spread increased gradually until the last week of April, when it peaked at \$0.12 on April 25 before dipping to \$0.09 on April 26. The monthly average LA-less-NYMEX spread for April was \$0.06, the highest since October last year, and \$0.06 higher than a year ago as well as a month ago.

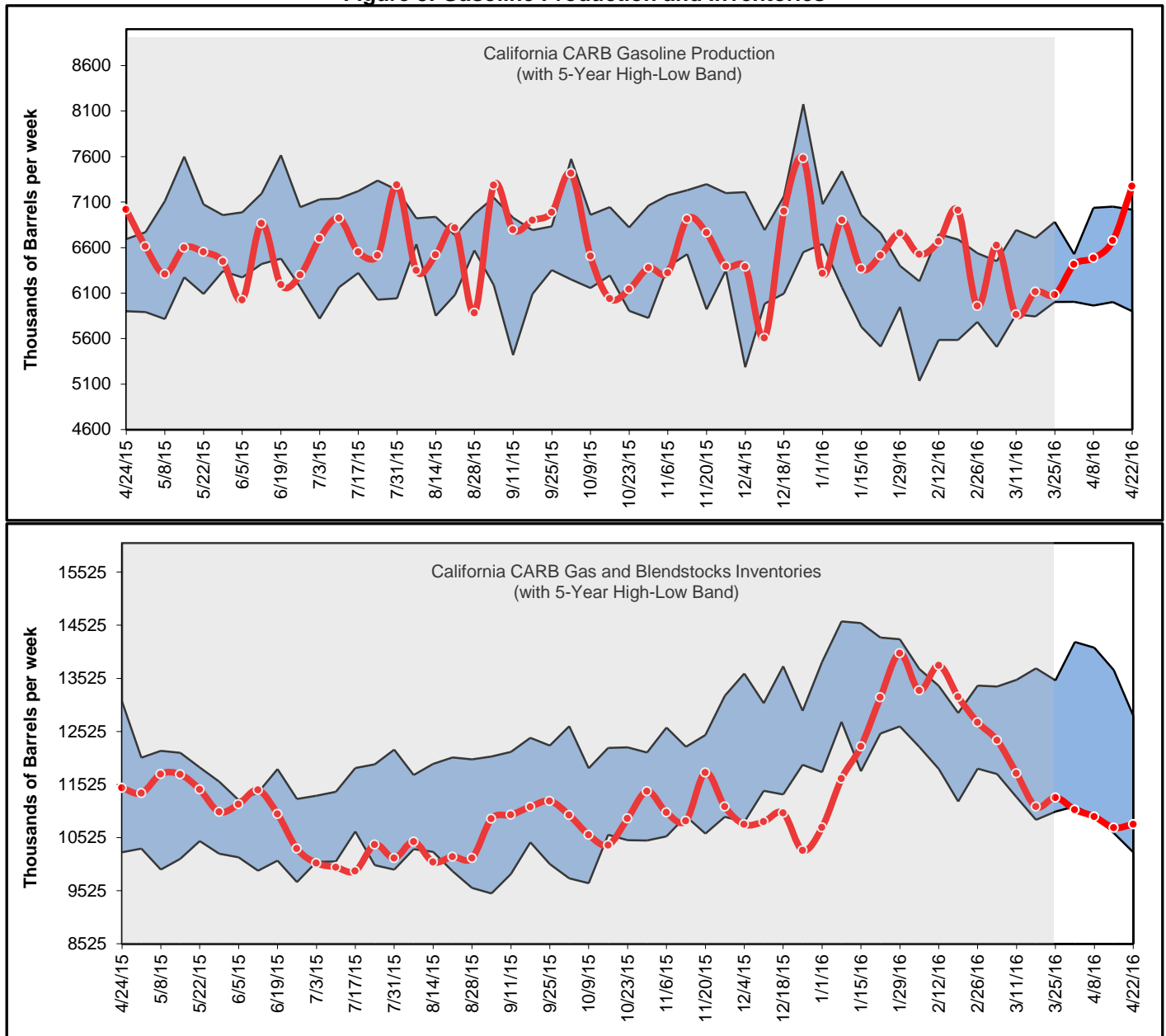
The rise of the SF-less-NYMEX differential in April was not as smooth. It hovered around \$0.02 to \$0.03 during the first half of April but rose and stayed around \$0.10 during the second half of the month, resulting in a monthly average of \$0.06, which is \$0.01 higher than a year ago and \$0.06 higher than a month ago.

CARB diesel fuel production decreased every week in April causing the already declining diesel fuel supply levels to reach and remain at a four-month low during the greater part of April. Consequently, the spot prices went up at the same time.

| <u>Diesel Spot-Futures Spread</u> | |
|-----------------------------------|-----------|
| <u>April 2016 vs 2015</u> | |
| (cents) | |
| Los Angeles | 6¢ higher |
| San Francisco | 1¢ lower |
| <u>April 2016 Averages</u> | |
| Los Angeles | 6¢ |
| San Francisco | 6¢ |
| <u>April 26, 2016</u> | |
| Los Angeles | 9¢ |
| San Francisco | 10¢ |

California Gasoline and Diesel Production and Inventories

Figure 8: Gasoline Production and Inventories

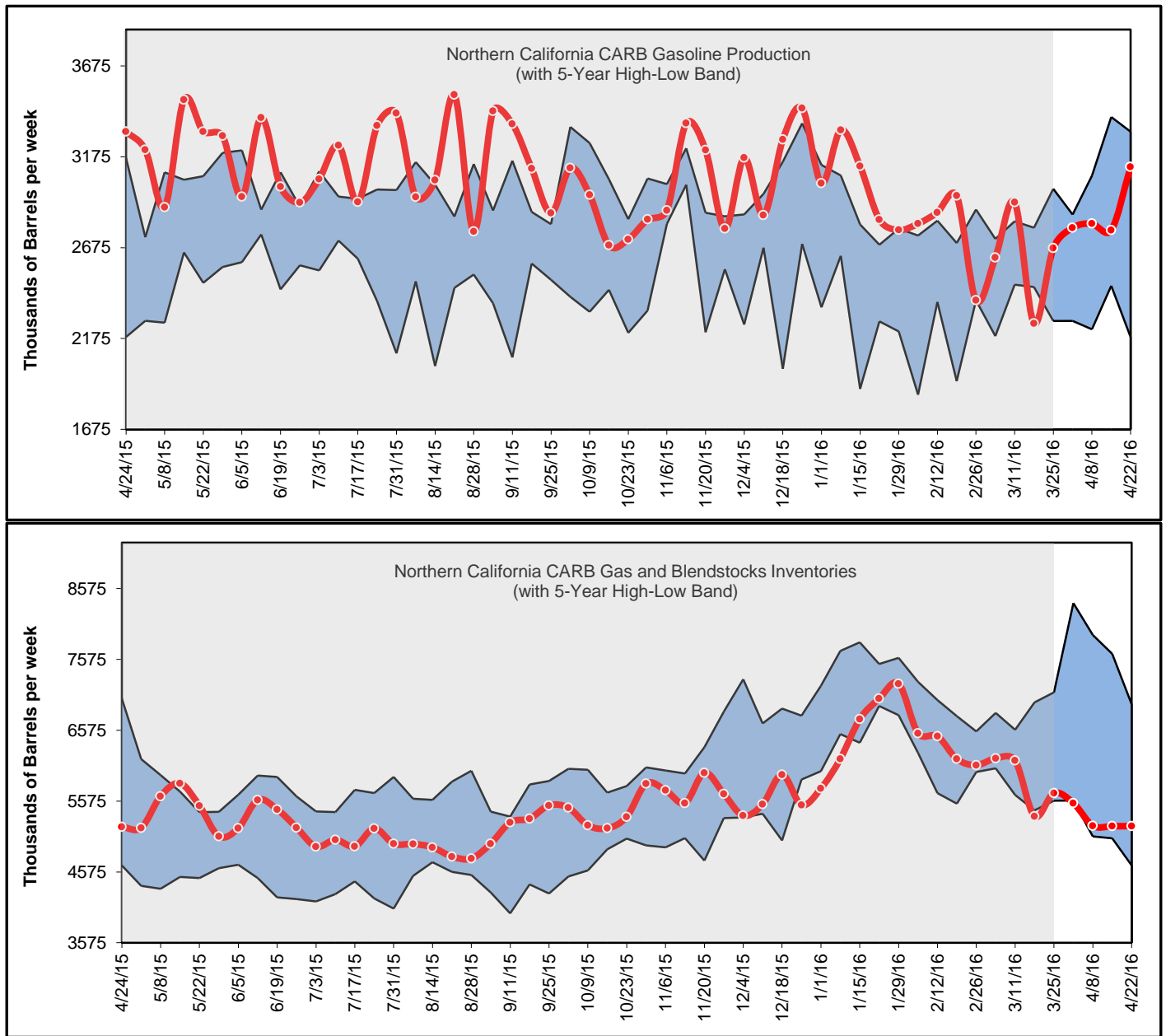


Source: PIIRA data

Gasoline production has increased fairly steadily since March 11, increasing 25 percent through the six weeks ending April 22. After being near the bottom of the five-year band on March 11, California gasoline production has moved above the five-year band at 7.3 million barrels-per-week (bpw) for the week ending April 22.

California gasoline inventories continue to decline from the February 12 high, 13.7 million barrels, to 10.8 million barrels on April 22, a 22 percent decline (**Figure 8**). Both of these trends are consistent with the ending of refinery maintenance season. During the past four weeks, Northern California and Southern California have shown similar trends, unlike most of the past year (**Figures 9 and 10**).

Figure 9: Northern California Gasoline Production and Inventories

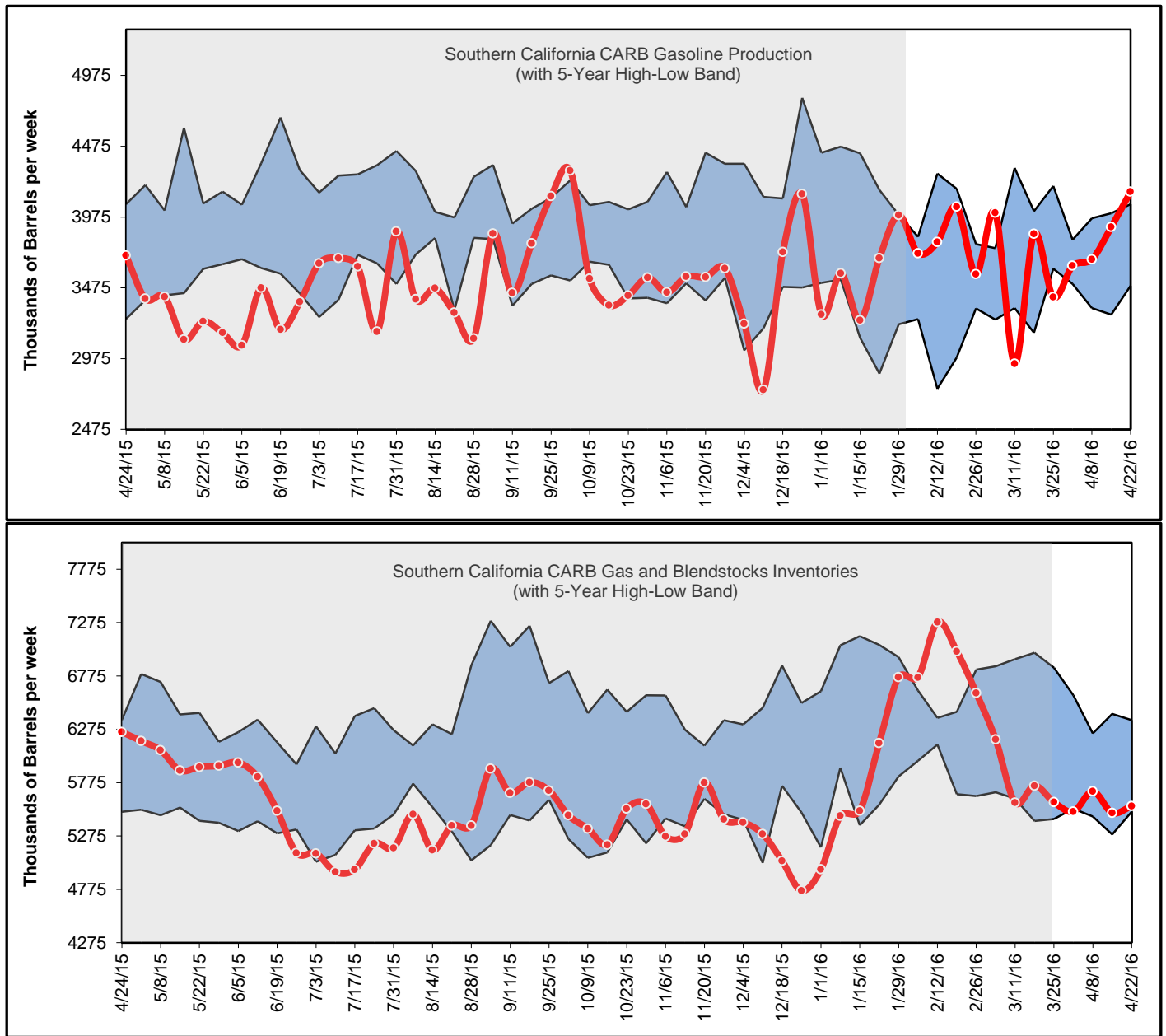


Source: PIIRA data

After three weeks of little change, Northern California gasoline production moved sharply higher during the week of April 22, from 2.8 million bpw to 3.1 million bpw. Nevertheless, it remains within the five-year band, which is unusual for the past year (**Figure 9**). Since March 18, when production was 2.3 million bpw, it has increased by 38 percent.

Northern California inventory levels have been within the five-year band for nearly 90 percent of the past year. Since January 29, inventories have dropped from 7.2 million barrels to 5.2 million barrels, a 28 percent decline. For the past three weeks, however, inventories have levelled off at about 5.2 million barrels, which nearly matches year-ago levels.

Figure 10: Southern California Gasoline Production and Inventories

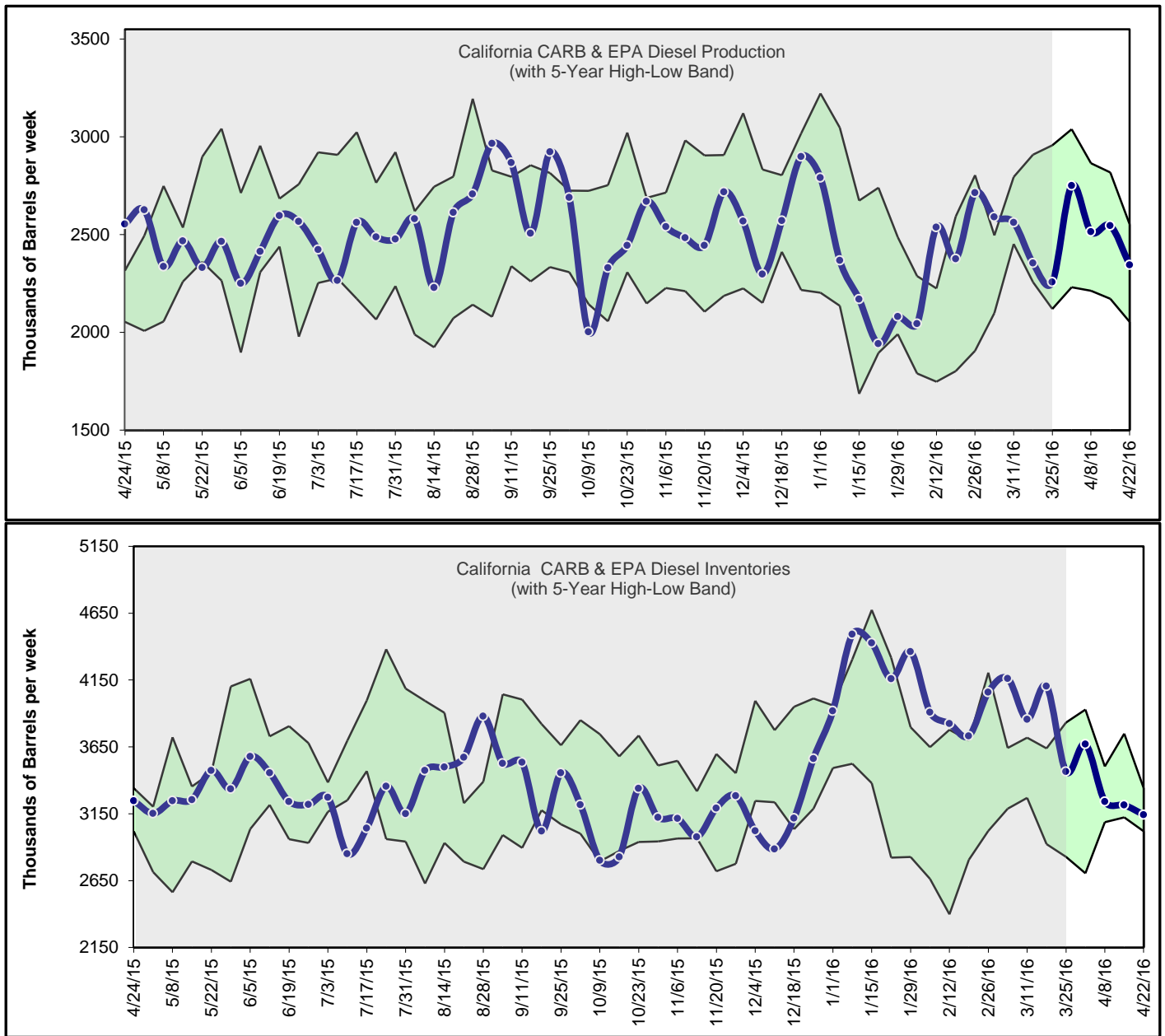


Source: PIIRA data

After falling below the five-year band for the week of March 25, Southern California production increased for four consecutive weeks and rose above the five-year band for the week of April 22. At 4.2 million bpw, this is a high for 2016, and during the past year only the week ending October 2 had higher production. This is a 41 percent increase from the 2016 low of 2.9 million bpw for the week of March 11, and is the first time in the past 12 months that production increased four weeks in a row.

Since March, inventories have remained fairly steady at or just above the bottom of the five-year band, between 5.5 and 5.7 million barrels (**Figure 10**). This put an end to the spike in Southern California inventories that occurred in January and February; inventories fell from 7.3 million barrels on February 12 to 5.6 million barrels on April 22, a decline of 24 percent.

Figure 11: Diesel Production and Inventories



Source: PIIRA data

Despite sizable fluctuations, California diesel production remained within the five-year band since the week of March 11 and currently sits at 2.3 million barrels, in the middle of the five-year band.

Diesel inventories have been in a general decline since January 8 and spent much of the first quarter above the five-year band. Nevertheless, in April, inventories have remained within the five-year band and on April 22 sat just above the bottom of the five-year band at 3.1 million barrels, a new 2016 low.